

## INOPERATIVE EQUIPMENT and INSTRUMENTS FLOWCHART

Is the equipment required by the aircraft's equipment list or the kinds of equipment list? FAR 91.213(d)(2)(ii) For Cessna 172, refer to POH Section 6; for Cessna 182T, refer to POH Section 2 and Section 6.	If YES, the aircraft is unairworthy and maintenance is required.
If NO, is the equipment required by the VFR day type certificate requirements prescribed in the airworthiness certification regulations? FAR 91.213(d)(2)(ii). For Cessna 172, refer to POH Section 2 and for Cessna 182T, refer to POH Section 2 and Section 6.	If YES, the aircraft is unairworthy and maintenance is required.
If NO, is the equipment required by AD? FAR 91.213(d)(2)(iv). Refer to Tab #7 of AIF for list of this equipment.	If YES, the aircraft is unairworthy and maintenance is required.
If NO, is the equipment required by FAR 91.205 or 91.207 (ELT requirement)?	If YES, the aircraft is unairworthy and maintenance is required.
If NO, the inoperative equipment must be placarded as inoperative. FAR 91.213(d)(3)(i) or FAR 91.213(d)(3)(ii). For G1000 aircraft, use this form to indicate equipment has been placarded INOPERATIVE.	At this point the pilot shall make a final determination to confirm that the inoperative instrument or equipment does not constitute a hazard under the anticipated operational conditions before release for departure.

### REQUIRED EQUIPMENT per FAR 91.205

	Engine Condition	Performance & Navigation	Safety Information
<b>For VFR day:</b>	Manifold Pressure (if applicable) Oil pressure (each engine) Oil Temp (each engine) Tachometer (each engine) Temp (if liquid-cooled)	Altimeter Airspeed Indicator Magnetic Compass	Fuel gauge (each tank) Anticollision Lights Landing gear indicator (if applicable) Safety Belts ELT (14 CFR 91.207)

	Engine Condition	Performance & Navigation	Safety Information
<b>For VFR night:</b>	Manifold Pressure (if applicable) Oil pressure (each engine) Oil Temp (each engine) Tachometer (each engine) Temp (if liquid-cooled)	Altimeter Airspeed Indicator Magnetic Compass	Fuel gauge (each tank) Anticollision Lights Landing gear indicator (if applicable) Safety Belts ELT (14 CFR 91.207) Fuses (if applicable) Landing Light (if for hire) Anticollision Lights Position Lights (14 CFR 91.209)

	Engine Condition	Performance & Navigation	Safety Information
<b>IFR day</b>	Manifold Pressure (if applicable) Oil pressure (each engine) Oil Temp (each engine) Tachometer (each engine) Temp (if liquid-cooled)	Altimeter Airspeed Indicator Magnetic Compass Generator Rate of turn indicator Attitude indicator Ball Clock Radios (com/ nav/ VOR) Direction indicator	Fuel gauge (each tank) Anticollision Lights Landing gear indicator (if applicable) Safety Belts ELT (14 CFR 91.207)
<b>For IFR night, add:</b>			Fuses (if applicable) Landing Light (if for hire) Anticollision Lights Position Lights (14 CFR 91.209)

### REQUIRED EQUIPMENT per FAR 91.207

FAR 91.207 (a) states in part:

Except as provided in paragraphs (e) and (f) of this section, no person may operate a U.S.-registered civil airplane unless -

(1) There is attached to the airplane an approved automatic type emergency locator transmitter that is in operable condition for the following operations...

## FAR 91.213 – INOPERATIVE EQUIPMENT and INSTRUMENTS

(a) Except as provided in paragraph (d) of this section, no person may take off an aircraft with inoperative instruments or equipment installed unless the following conditions are met:

- (1) An approved Minimum Equipment List exists for that aircraft.
- (2) The aircraft has within it a letter of authorization, issued by the FAA Flight Standards district office having jurisdiction over the area in which the operator is located, authorizing operation of the aircraft under the Minimum Equipment List. The letter of authorization may be obtained by written request of the airworthiness certificate holder. The Minimum Equipment List and the letter of authorization constitute a supplemental type certificate for the aircraft.
- (3) The approved Minimum Equipment List must—
  - (i) Be prepared in accordance with the limitations specified in paragraph (b) of this section; and
  - (ii) Provide for the operation of the aircraft with the instruments and equipment in an inoperable condition.
- (4) The aircraft records available to the pilot must include an entry describing the inoperable instruments and equipment.
- (5) The aircraft is operated under all applicable conditions and limitations contained in the Minimum Equipment List and the letter authorizing the use of the list.

(b) The following instruments and equipment may not be included in a Minimum Equipment List:

- (1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated and which are essential for safe operations under all operating conditions.
- (2) Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise.
- (3) Instruments and equipment required for specific operations by this part.

(c) A person authorized to use an approved Minimum Equipment List issued for a specific aircraft under subpart K of this part, part 121, 125, or 135 of this chapter must use that Minimum Equipment List to comply with the requirements in this section.

**91.213(d)** Except for operations conducted in accordance with paragraph (a) or (c) of this section, a person may takeoff an aircraft in operations conducted under this part with inoperative instruments and equipment without an approved Minimum Equipment List provided—

- (1) The flight operation is conducted in a—
  - (i) Rotorcraft, non-turbine-powered airplane, glider, lighter-than-air aircraft, powered parachute, or weight-shift-control aircraft, for which a master minimum equipment list has not been developed; or
  - (ii) Small rotorcraft, non turbine-powered small airplane, glider, or lighter-than-air aircraft for which a Master Minimum Equipment List has been developed; and
- (2) The inoperative instruments and equipment are not—
  - (i) Part of the VFR-day type certification instruments and equipment prescribed in the applicable airworthiness regulations under which the aircraft was type certificated;
  - (ii) Indicated as required on the aircraft's equipment list, or on the Kinds of Operations Equipment List for the kind of flight operation being conducted;
  - (iii) Required by §91.205 or any other rule of this part for the specific kind of flight operation being conducted; or
  - (iv) Required to be operational by an airworthiness directive; and
- (3) The inoperative instruments and equipment are—
  - (i) Removed from the aircraft, the cockpit control placarded, and the maintenance recorded in accordance with §43.9 of this chapter; or
  - (ii) Deactivated and placarded "Inoperative." If deactivation of the inoperative instrument or equipment involves maintenance, it must be accomplished and recorded in accordance with part 43 of this chapter; and
- (4) A determination is made by a pilot, who is certificated and appropriately rated under part 61 of this chapter, or by a person, who is certificated and appropriately rated to perform maintenance on the aircraft, that the inoperative instrument or equipment does not constitute a hazard to the aircraft.

An aircraft with inoperative instruments or equipment as provided in paragraph (d) of this section is considered to be in a properly altered condition acceptable to the Administrator.

(e) Notwithstanding any other provision of this section, an aircraft with inoperable instruments or equipment may be operated under a special flight permit issued in accordance with §§21.197 and 21.199 of this chapter.